

MindShift

How Do We Prepare Our Children for What's Next?



Paul Schultz

What kids learn at a young age will determine whether they're prepared for a future full of unknowns.

When most of us were deciding what to major in at college, the word Google was not a verb. It wasn't anywhere close to being conceived at all. Neither was Wikipedia or the iPhone or YouTube. We made decisions about our future employment based on what we knew existed at the time. We would become educators, journalists, lawyers, marketing reps, engineers.

Fast forward a couple of decades (or more) and we see that the career landscape has changed so drastically that jobs need new definitions. Social media strategist, app developer, mobile web engineer?

Some of us could ask ourselves if we would have embarked upon our current careers had we predicted how the Internet would revolutionize every part of our lives? It's hard to say, but when it comes to preparing

our kids for what's ahead, Cathy Davidson has a few ideas. The author of ***Now You See It: How the Brain Science of Attention Will Transform the Way We Live, Work, and Learn*** (Viking), who's also a professor at Duke University, believes that, in light of the fact that "**65 percent of today's grade-school kids may end up doing work that hasn't been invented yet**," we should cast aside our fear of technology, and prepare our school-aged kids with important skills, both in technical ways and other less tangible ways.

"We're 15 years into something so paradigm-changing that we have not yet adjusted our institutions of learning, work, social life, and economic life to account for the massive change."

"We are right on time to give up techno-phobia and to tackle the problems and opportunities of the digital world with good sense, pragmatics, realism, and purpose," Davidson said. "Once we absorb the realization that we've *already changed*, and that we're actually doing pretty well despite major realignments in our lives, then we can think about how we want to take this amazing new tool [the Internet] and use it in a way that better serves our lives. It's time to survey our lives

and figure out what works, what doesn't, and how we can make real and practical improvements in our

schools, our workplace, our every day lives.”

Davidson offers three can-do suggestions for parents:

EXPERIMENT WITH SCRATCH. It's a **brilliant and fun multimedia programming language** that allows inventive media mixing almost immediately, without any background. It is creative and fun. Even if your child has no interest in being a programmer when they grow up, familiarity with the **building blocks of a programming language** will give them some skills and expertise at producing the kind of content they are already consuming. [See "**5 Tools to Introduce Programming to Kids**."]]

EMBARK ON A MEANINGFUL PROJECT. Help your child (at any age, really) by being willing to help out—but emphatically not to lead or rescue—in an extended, risky project that has real impact in the child's community—school, neighborhood, church, synagogue, community center. But stay out of the way. Let the kids shape the project. Kids should find a project that will probably not succeed in all the ways they hope. Dreaming big, taking risks, and scaling back if and when you have to are fantastic skills. These skills are hardly ever taught in the school room which seems to be organized (as is much American society these days) as if some litigious personal injury lawyer is there ready to pounce at any moment.

LEARN HOW TO BE A RESPONSIBLE DIGITAL CITIZEN. Learn how to give and take feedback in a public and responsible way. There are different software tools that can help you set up a system where each student has an online identity, for privacy. Give each student 10 stars to award over the course of, let's say, a 10-week project. Each week, every student is required to award one star to a member of the team whom s/he deems to have done the most to move the project forward. Before students award their stars, they need to put in writing, on the class website, the reasons for the choice. They shouldn't waste good energy on negative criticism. Critique is the easy way out, as anyone who has read the trollish comments on the Internet knows. Negative comments are a drain on everyone's energy and negativity is not the same as high standards. If each star is awarded with a well thought out assessment of why merit has been earned, that is a far better way to train judgment than trashing. What special contribution did a classmate make that made you want to give him or her a star? Everyone will learn from the answer (and the accumulating stars). Sound easy? It's not. But if you can learn *judgment*—not silly bubble test grading, not sarcasm or bullying but clear-eyed judgment on the way to the group's success at attaining its goals—then you are building up a repertoire of successful skills and methods that you can call upon later, in any circumstance.

Davidson believes the **culture of fear** that has dominated the public discussion around the Internet and kids is damaging at best, ruinous at worst.

“Sadly, it's a fearful time in American culture, with news focusing excessively on everything tragic, horrifying, and threatening in the world,” she said. “There is no evidence of an increase in such crime, just an increase in reporting.”

And the notion that the Internet is ruining our brain, our attention and memory is false, she says. “Everything new changes our habits, makes new patterns, and there is certainly a learning curve whenever we face new challenges. But the fact is we’re doing amazingly well. Let’s have some perspective here!” she says.

Davidson also believes the archaic education system — especially when it comes to graded exams — will inevitably change because it has to. The discrepancy between how kids learn inside the formal school environment — complete with bell schedules and drills — and the free-form and social nature of informal learning will invariably have to be addressed.

In my interview with Davidson, I ask her to enumerate practical steps schools can take to prepare students for the future, and what she considers to be the ideal school day.

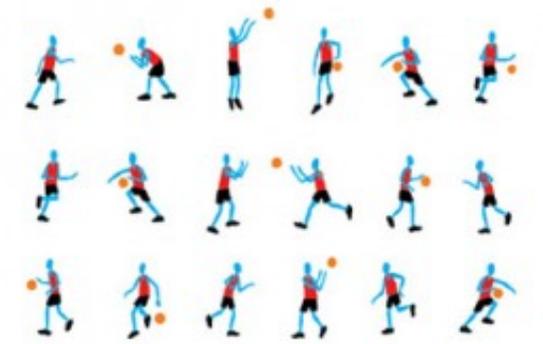
Here’s the full transcript of my interview with Davidson. I recommend reading it — and Davidson’s book — in full. It’s well worth the time.

Q. It seems that so much of the apprehension about bringing technology into schools is about fear. Fear of losing control of information, fear of harming children’s attention spans, their learning brain. How do you think we can address or overcome these fears?

A. Sadly, it’s a fearful time in American culture, with news focusing excessively on everything tragic, horrifying, and threatening in the world, especially sexual crimes against children. There is no evidence of an increase in such crime, just an increase in reporting. And an exponential increase, for middle-class American parents, in limiting our children’s mobility. We know from research that a child’s world has shrunk in the last 200 years in the West from being allowed, as preteens, to wander to the next village or to roam over one’s city until now, where even “play” has to be monitored by an adult-arranged and supervised “play date.”

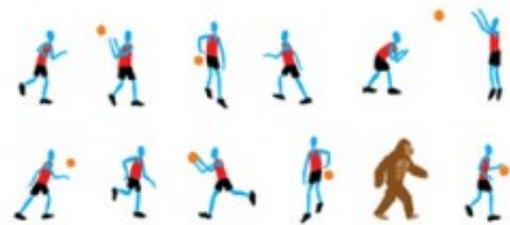
We are also fearful about ourselves—the Internet is ruining our brain, our attention, our memory. Well, it isn’t. Everything new changes our habits, makes new patterns, and there is certainly a learning curve whenever we face new challenges. But the fact is we’re doing amazingly well. Let’s have some perspective here!

Historian Robert Darnton says there have been four great Information Ages in all human history, where a



NOW YOU SEE IT

HOW THE BRAIN SCIENCE OF ATTENTION WILL TRANSFORM THE WAY WE LIVE, WORK, AND LEARN



CATHY N. DAVIDSON

“We are right on time to give up techno-phobia and to tackle the problems and opportunities of the digital world with good sense, pragmatics, realism, and purpose.”

new technology has transformed how we communicate and interact—and he goes back to 4000 BC Mesopotamia for the first of these, the invention of writing. Then comes movable type, then mass steam-powered printing of the Industrial Age that makes books available to the masses for the first time in history, and now, our own Information Age where anyone can

“Broadcast Yourself.” We’re 15 years into something so paradigm-changing that we have not yet adjusted our institutions of learning, work, social life, and economic life to account for the massive change. Fifteen years in is when people tend to start thinking about technological change in less fearful and more practical ways. They give up their nostalgia for the “before” and then start to focus on now, on how we can make the tools and resources available to them as productive as possible.

In other words, we are right on time to give up techno-phobia and to tackle the problems and opportunities of the digital world with good sense, pragmatics, realism, and purpose. Once we absorb the realization that we’ve *already changed*, and that we’re actually doing pretty well despite major realignments in our lives, then we can think about how we want to take this amazing new tool and use it in a way that better serves our lives. Being afraid is never useful. It’s time to survey our lives and figure out what works, what doesn’t, and how we can make real and practical improvements in our schools, our workplace, our every day lives.

Q. What do you predict could happen if the education system continues to resist the change?

A. I predict the education system will change. It has to. There were enormous changes to all forms of education in the last decades of the nineteenth century. In fact, most of what we think of as “school” was developed and institutionalized about 120 years ago to teach kids regulation and efficiency, the bywords of industrialization. Farm kids and immigrant kids were streaming into the cities. To make an industrial labor force required the school bell (in literal and metaphoric terms) and lots of regimentation.

“I think we are on the verge of seeing a major change in educational policy and in how we test, how we measure, and how we teach and learn.”

We have a mismatch between the inventive ways kids learn at home online and in their game play and with their friends on social networks and the industrial age structure, division of subject matter, and ways of assessment in school. It will change—because everyone (parents, teachers, kids, principals, policy makers) know our schools are out of date. I think we are on the verge of seeing a major change in educational

policy and in how we test (the first step—get rid of those End of Grade exams!), how we measure, and how we teach and learn. It *will* happen because it has to.

Q. What do you think that ideal school day could look like?

A. Remember Ichabod Crane, that parody of the tiresome schoolmaster in Washington Irving’s story “The

Legend of Sleep Hollow” (published in 1820). If you plunked him down in a contemporary school room, he wouldn't have a clue what electricity was, he'd be baffled by computers, but he would know exactly where to stand and he'd know exactly where he stood: front of the class, in charge, teaching to the test!



Cathy Davidson

In my ideal school, there would be no one school day because every day would be different. And it wouldn't be a school of the future: the future is now! In researching *Now You See It: How the Brain Science of Attention Will Transform the Way We Live, Work, and Learn*, I spent time with incredible teachers who, in ways large and small, inspire their students to learn. My future school would bring them together, take lessons from them. They give us heart and will because they already exist. We can learn from these three, one who taught decades ago in a rural one room school house, one senior scholar-teacher in a Manhattan school, one brand-new twenty-four year old teacher in a small urban city (in Durham,

N.C.).

“In my ideal school, there would be no one school day because every day would be different.”

- **From Inez Davidson:** Mrs. Davidson is a “back to the future” teacher whose Friday “challenge days” can be incorporated into any school today, right now. She taught back in the 1950s to 1980s, in a three-room school house in rural Mountain View, Alberta, Canada.

She turned teaching third-, fourth-, and fifth-graders into an asset instead of a deficit, having kids teach one another what they had learned the year before. And every Friday, the third- and fourth-grade kids would be pitted against the fifth graders in a learning challenge that the kids themselves would dream up—spelling bees, math quizzes, geography tests, language tests, grammar tests, poetry and rhyming competitions. Or project challenge: Who can build the highest tower out of Popsicle sticks without glue? And then she set year-long challenges as well. My personal favorite was challenging the kids to find pen pals in as many Mountain Views as they could find anywhere in the world, researching the places where they lived, becoming pen pals, and then interviewing the pen pals for a final research paper on Mountain Views in China or New Zealand. Decades before the Internet, she made learning connect kids around the world, expanding horizons, teaching geography and languages and politics and history in a way that mattered intensely to the kids.

- **From Katie Salen:** I would take the idea of the Boss Level Challenge, a building block of the game mechanics that power [Quest2Learn](#), a public school in Manhattan. Katie Salen is a professor at Parsons School of Design who was part of the [MacArthur Foundation Digital Media and Learning Initiative](#) that I've also been working with for several years, helping to run the annual Digital Media and Learning Competitions. Katie proposed working with the New York city school board, with teachers and parents, to create a revolutionary school within all the existing rules. Q2L works with the teachers' unions, with the city's lottery system of accepting pupils, with end-of-year testing, with college prep aspirations, with all of the supposed restrictions that limit teachers everywhere. I couldn't believe she would succeed, but Katie is a gamer and she met the challenge. Q2L exists and she's now working in

Chicago to start similar schools. The specific assignment that I loved at Q2L took kids who had spent a semester building new levels for the popular digital learning game LittleBigPlanet (LBP) and challenged them to rebuild their video game level in the real world. They switched off the screens and had to calculate and plan, with blueprints and research and scissors and glue, paper and wood and paint. Brilliant! Kids need to understand the relays back and forth between real and virtual worlds and need the skills to navigate both.

- **From Duncan Germain:** Duncan was a 24-year old first-year teacher when I spent time in his sixth grade class at Voyager Academy, a public charter school in Durham, North Carolina, where I live. He taught something called Creative Productions which was intended to take all the things kids were learning in other classes and give them real world application. I was there for the bridge building challenge where students self-organized into groups ranging in size from one (some kids preferred to work alone) to five. I talk about all the really remarkable skills his students were learning on the way to build the best model bridge but what most impressed me was the long sheet about collaboration that each student had to fill out, describing such things as how to “justify” the project they were doing and their methods relative to their other school studies, the habits of mind the project was instilling, and the relationship of the project to the real world. Sounds tough? They were doing it. When I asked Mr. Germain where he got the idea, he said from his father. These sixth graders were using a project-plan form that his father used as a management consultant helping businesses adjust to new global, distributed economies of work and labor.

These are just three examples. I think it's important for all of us to know that future school already exists, it is working. These great teachers and others I profile in *Now You See It* inspired me and I hope they inspire other out there too.

Q. If you could suggest five practical applications to apply to every school in the country, what would they be?

End standardized EOG tests—they demotivate learning and good teaching. Instead test in challenging ways, using tough game mechanics with real-time feedback on results so kids can learn from the test —not be taught to scam the test!

Make all learning real, relevant, tied to communities, with real application in the kids' lives outside of the classroom. Example: Ban research papers—unless they are published online and have an informative, persuasive, or other real purpose for others. Learning should have an impact beyond getting an “A” on the assignment.

Teach kids to think through, with, about, for—and create—new, interactive digital global communication. I don't mean this as an add on. I mean rethinking all the subjects we now teach in view of the possibilities (what techies call “affordances”) of the digital age. That means getting rid of the “two cultures” binary. STEM subjects are impoverished without creativity, analysis, critical thinking. The Information Age is about putting back together the knowledge that the Industrial Age subdivided. A simpler way is to say have them all learn Scratch multimedia programming and think about the

possibilities.

Restore arts, music, shop, P.E., dance: Kids need the soul-stirring learning that lets them move, make, sing, create, dream.

Eliminate the “college prep” and AP distinctions, and stop making college the implicit standard for all education, back to preschool. Many worthy careers don't need higher ed. Many careers that don't need higher ed still need a liberal arts education in creative, applied, cross-disciplinary thinking, all of which are as necessary to run your whole hair salon or motorcycle repair shop as they are to get a law degree. Conversely, make college free and open to everyone, at any age. Now, that would be a game changer!

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